ABSTRACT

It is an object of the present invention to provide a non-aqueous electrolyte secondary battery having high energy density and satisfactory-cycle performance by using an alloy comprising. Ni and Snas a negative active material; and the non-aqueous electrolyte secondary battery comprising a negative electrode with a composite layer containing a negative active material, a positive electrode and a non-aqueous electrolyte is characterized in that said negative active material consists of an alloy containing 5 to 25 mass% of nickel and 75 to 95 mass% of tin, and that such alloy contains Sn₄Ni₃ phase and Sn phase.

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It is preferable that the content ratio of Sn_4Ni_3 phase and Sn phase in the above described alloy be $0.2 \le Z \le 3$, supposing that m_1 is the mass of Sn_4Ni_3 phase, m_2 is the mass of said Sn phase, and $Z = m_1 / m_2$; and that the above described composite layer contain carbon material.